POWER CONTROL CIRCUIT WITH ACTIVE IMPEDANCE TO PREVENT SENSING OF SPURIOUS INFORMATION

ABSTRACT OF THE DISCLOSURE

A power control circuit includes sensing circuitry for sensing information about operation of a power device such as an IGBT or other power FET. The sensing circuitry receives a sense input signal from the power device through a gating device such as a diode. The power control circuit also includes active impedance circuitry for preventing the sense input signal from including spurious information received from the gating device. For example, if the gating device is a diode across which negative spikes can be capacitively coupled, the active impedance circuitry can prevent the negative spikes from reaching the sensing circuitry when the diode is off. The active impedance circuitry can take the form of a transistor connected between a power supply and a sensing node. The active impedance device can be switched on by a comparator when the voltage across the power device exceeds a reference voltage, indicating the power device is off. Alternatively, the active impedance device can be controlled by a comparator in the sensing circuitry that provides an output that similarly indicates whether the power device is on or off. The sensing circuitry and active impedance circuitry can be implemented on an integrated circuit.